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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/636,226	08/10/2000	Masahiko Hirose	04558.044001	7100

22511 7590 12/19/2002

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EXAMINER

FORTUNA, ANA M

ART UNIT PAPER NUMBER

1723

DATE MAILED: 12/19/2002

14

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

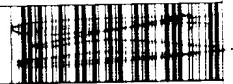
Application No  
09 636,226

Applicant

Hirose

Examiner  
Ana Fortuna

Art Unit  
1723



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

Extensions of time may be available under the provisions of 37 CFR 1.136. a. In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication. If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely. If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication. Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. 35 U.S.C. § 133. Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704 b.

## Status

- 1) ☒ Responsive to communication(s) filed on Sep 3, 2002
- 2a) This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above, claim(s) 6-11 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are a) \_\_\_\_\_ accepted or b) \_\_\_\_\_ objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) \_\_\_\_\_ approved b) \_\_\_\_\_ disapproved by the Examiner. If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some\* c) None of:
- Certified copies of the priority documents have been received.
  - Certified copies of the priority documents have been received in Application No. \_\_\_\_\_
  - Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
- a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- |   |  |
|---|--|
| 1 <input checked="" type="checkbox"/> Notice of References Cited: PTO-892 | 4 Interview Summary: PTO-413: Paper No. s        |
| 2 Notice of Draftsperson's Patent Drawing Review: PTO-946                 | 5 Notice of Informal Patent Application: PTO-152 |
| 3 Information Disclosure Statement: PTO-1449: Paper No. s                 | 6 Other  |

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## DETAILED ACTION

### *Claim Rejections - 35 U.S.C. § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459

(1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
3. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones et al (5,876,602)(hereinafter Jones) in view of Demmer et al (5,547,575)(hereinafter Demmer). Jones substantially teaches the claimed invention, e.g. the treatment of an interfacial polymerized composite membrane with a halogenating agent, e.g. hypochlorite (abstract, column 2, lines 33-68, and column 3, lines 1-60). Treating the polyamide membrane with "free chlorine aqueous

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solution containing bromine" is not disclosed" Reference to Demmer teaches treating a polyamide membrane with halogenating agent, e.g. hypochlorite, hypobromite, chlorine or bromine (column 2, last paragraph, column 3, first paragraph). The halogenating steps are disclosed (column 7, 1st paragraph through column 8, lines 1-27). The specific "free chlorine aqueous solution containing bromine" is not disclosed, however, Demmer teaches treatment with hypobromite generated in situ (column 8, lines 20-33). As recognized by Applicant's response of 9/03/02, the solution containing bromine produces hypobromite (HOBr), therefore, the resulting membrane is a hypobromite treated membrane. It would have been obvious to one skilled in the art at the time the invention was made to expect bromination of the membrane by treatment with hypobromite as suggested by Demmer. It would have been obvious to one skilled in the art at the time the invention was made to substitute the hypochlorite treatment of Jones, for the composite polyamide membrane, with a hypobromite treatment, since hypobromite and hypochlorite are art well recognized equivalents, as evidenced by Demmer, improvement in membrane properties should have been expected by the skilled artisan at the time the invention was made, and based on Jones (column 2, lines 33-52). Regarding claim 2, the membrane is a composite having skin layer, since the membrane is completely treated, the halogenating agent is expected to be present in the skin layer. Regarding claims 3-5, the halogenating agent composition and pH, temperature, and concentration are disclosed in Jones (column 3, lines 4-41, and lines 65-68, through column 4, lines 1-35). The BR/N ratio in the membrane can be expected by one skilled in the art at the time the invention was made, e.g. when concentration factors of the hypochlorite are adjusted within

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the values suggested by Jones. The isopropyl alcohol rejection as claimed in claim 4 is not disclosed. It would have been obvious to one skilled in the art to have a polyamide membrane with the claimed properties, by treating with the bromine containing solution or hypobromite solution within the conditions and concentration suggested by Jones, adjusting the ratio to adjust membrane properties it would have been obvious to one skilled in the art at the time the invention was made.


4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Additional prior art cited in form 892, discloses membranes treated with halogenating agents, in particular polyamide membranes..

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ana Fortuna whose telephone number is (703) 308-3857. The examiner can normally be reached on Monday-Friday from 9:30 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker, can be reached on (703) 308-0457. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310 for regular responses, and (703)872-9311 for after finals.

Ana Fortuna

December 14, 2002



**ANA FORTUNA**  
**PRIMARY EXAMINER**